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CLAYTONIA VIRGINICA, L.—The following observations on *Claytonia Virginica* may be of interest, as they seem to establish the fact of heteromorphism. The following variations were noticed:

1. The larger number of specimens were roseate, with stamens equaling or exceeding the style, anthers all perfect and pollen bearing.

2. A smaller number of specimens have flowers pure white, smaller every way; style as in No. 1; stamens imperfect, filaments short and unequal, anthers bearing no pollen.

3. Specimens were found with flowers as in No. 1 and No. 2, growing from the same tuber, on different stems.

4. Later in the season a number of specimens were found, in which a part of the stamens of each flower were of ordinary length and perfect, and part were short and abortive. Fruit was perfect and abundant in all forms. How can Prof. Meehan's theory of self-fertilization during "sleep" work in No. 2? Nearly the same variations were noted in *Epigæa repens*, except there was no difference in length of styles in two forms.

I found a half dozen specimens of pure white *Lobelia syphilitica* a few days before I received your October No.—C. F. WHEELER, *Hubbardston, Mich.*

SEVENTH ANNUAL REPORT OF THE GEOLOGICAL SURVEY OF INDIANA, BY E. T. COX, STATE GEOLOGIST, 1875.—This is the largest report sent out by the Geological Survey, containing some 600 pages of valuable material. Two contributions are of special interest to botanists and hence come within the scope of the GAZETTE to notice. They are "Species of Fossil Marine Plants from the Carboniferous Measures," by Prof. Leo Lesquereux, and a "Catalogue of the Flora of the Lower Wabash," by Dr. J. Schneck. The latter is worthy of a more extended notice than can be given it in this number and will be reviewed in a subsequent article. The former more strictly belongs to Geology, but is of interest to all botanists interested in the ancient as well as the modern flora of our country. It is a description of five new species of fossil marine plants from the coal measures, and their interest and importance cannot better be stated than in the introduction of the author.

"The occurrence of fucoidal remains or of fossil marine plants, in the coal measures, is extremely rare. Indeed it is questionable if any species of this kind has ever been discovered in the carboniferous formation of Europe. In this country one species only has been described, in 1866, from specimens found in a thin bed of limestone, occupying the place of the millstone grit, opposite Wurtemberg, on Slippery Rock creek, a branch of the Coneconessing river in Pennsylvania. The species is related by its characters, to the so-called and well known *Fucoides Cauda-galli* of the middle and upper *Devonian*, and therefore does not represent ancient types, like those which are described here, and which recall the oldest forms of marine plants, those of the Silurian, even of the lower divisions of this formation, the calciferous sandstone of New York.

It may seem of little importance to have plants of this kind described and figured in a geological report, but as geologists have to consider, for the determination of the age of the strata of our earth, the remains of plants and animals which, preserved in their compounds, may determine by their nature the position of valuable deposits of minerals, even mere fragments of these organisms become important for their researches. And when fossils are found, which not only represent new types of plants or of animals, but which are remarkable by their presence in a formation where nothing like has ever been found, the discovery is indeed worth recording in the annals of geology, and gives to the report where they are described a wide and general interest."

ASTER OBLONGIFOLIUS, Nutt.—Beautiful specimens of this *Aster* were found growing at Clifty Falls, October 12th of this year. It takes the form of a small shrubby

bush and grows at the very edge of the cliffs, hanging down over them so as to make it almost dangerous to collect it. Near Madison it was found growing all over one hillside, its large violet-purple heads making it an object of much beauty. Its leaves are so rigid that they soon dry and become very brittle and hence in collecting specimens in flower all the lower leaves are apt to drop off and leave only the leafless stock.—J. M. C.

RECENT PERIODICALS.—*American Journal of Science and Arts*, October. The only botanical note is an extract from the *Buffalo Courier* on "Sensitive Stigmas as an aid to cross fertilization of Flowers," by Prof. W. J. Beal, read at the recent meeting of the American Association held at Buffalo. Observations were especially made upon *Martynia proboscidea*. It seems that the humble bee or common hive bee aids in the cross fertilization of this plant. When the bee, loaded with pollen, alights on the spotted, showy part of the corolla, it crawls in, first hitting the stigmas. "These are sensitive to the touch and close up in five to ten seconds, often before the insect is ready to back out of the flower. If they are not quite closed at that time, the bee shuts them by pushing her back against the back of one of the stigmas. The lower lobe of the flat stigma next to the bee's back is the larger. No pollen can be left as the insect retreats and a cross of pollen is usually certain. If not freely dusted with pollen the stigmas open again in about fifteen minutes." The *Iris* is mentioned as acting in a similar way. The stigmas of *Mimulus ringens* are also sensitive and dusted with pollen by small Hymenoptera. The stigmas of *Mimulus luteus* and *M. moschatus* close quickly upon being touched. *Tecoma radicans*, *T. grandiflora* and *Utricularia vulgaris* are all like *Martynia* in the peculiarities mentioned.

*American Naturalist*, October.—"Carnivorous Plants," by Prof. W. J. Beal, is rather an enumeration of those species and genera of plants which catch insects by various contrivances. Commencing with the discovery by Mr. Ellis, in 1768, of the powers of the Venus fly-trap, we are led down through *Drosera*, *Sarracenia*, *Nepenthe*, *Pinguicula*, *Utricularia*, *Solanaceæ*, and *Silene*, to *Martynia proboscidea* which the author thinks is a true insectivorous plant. This plant, with its curious cross fertilization and insectivorous propensities, may prove to be an exceedingly interesting one. As *Martynia* is within reach of almost every reader of the GAZETTE, I have thought it would not be unprofitable to quote some of the observations made upon it by Prof. Beal, and they can be very easily verified by almost any botanist:

"I have lately given some attention to the *Martynia* on account of the great number of small insects which it catches by glandular hairs. On August 3d I counted seventy-six small Diptera and some other insects on the upper side of a young leaf of about four inches average diameter, and two hundred on the under side. The insects are caught on all parts of the plant which are exposed, on the stems, on the calyx and corolla, including even the throat of the corolla. Among a lot of others was one plant about three feet high, spreading three feet in diameter, which according to estimate had seven thousand two hundred small flies on it at one time. The hairs are very numerous all over the surface. None of them are sensitive, as I can find. They vary exceedingly in length, from three-sixteenths of an inch to one one-hundredth or even shorter. Some of them have as many as ten cross partitions. The contents of these cells appear quite clear, except one near the top, next to the top cell. This is larger than several of those below, and contains chlorophyll. It seems to be something like a gland. Above this is a larger cell, with perpendicular striæ along its sides. When fresh and undisturbed the top is nearly spherical and resembles a small drop of dew. The secretion is quite copious and exceedingly viscid, with an unpleasant odor. I placed some small fragments of raw beef on the glands one morning, but the sun seemed to dry them up, much as it did those left on blades of grass which had no glands. I placed some very minute portions on the glands in a spot sheltered from the